CLAIMS:

1. A signal transmitting method in a base station, comprising the steps of:

transmitting a common channel signal at a first predetermined power level;

transmitting a pilot signal at a second predetermined power level, the pilot signal being transmitted at a power level greater than the second predetermined power level for a predetermined time period; and

transmitting a data channel signal.

2. The method of claim 1, wherein the pilot signal transmitted at the predetermined power level is spread by a first spreading code, and the pilot signal being transmitted at the higher power level for the predetermined time period is spread by a second spreading code.

3. The method of claim 2, wherein the pilot signal is spread by one spreading code.

4. The method of claim 2, wherein the first and second spreading codes are orthogonal codes.

5. The method of claim 4, wherein the orthogonal codes are Walsh codes.

6. The method of claim 1, wherein the predetermined time period is located at the boundary of consecutive data frames of the second signal.

7. The method of claim 6, wherein the predetermined time period occupies half of said consecutive data frames.

8. The method of claim 1, wherein the predetermined time period is set in consideration of propagation environment around the base station, arrangement of base stations, and a signal bandwidth.

9. The method of claim 7, wherein the predetermined time period represents a fraction of one data frame.

10. The method of claim 1, wherein the higher power level is equal to the overall transmission power of the base station.

11. A transmitting device for transmitting a pilot signal, a common channel signal, and a data channel signal from a base station in a mobile communication system, comprising:

a first spreader for spreading a signal by a first spreading code to generated a first pilot signal;

a second spreader for spreading a signal by a second spreading code for a predetermined time period to generate a second pilot signal;

an adder for adding the spread signals; and

a third spreader for spreading the added signal by a common spreading code.

12. The transmitting device of claim 11, wherein the different spreading codes are orthogonal codes.

13. The transmitting device of claim 11, wherein the common spreading code is a PN code.

14. The transmitting device of claim 11, further comprising:

a time controller for controlling the gain of the pilot signal for a predetermined time period; and

a plurality of gain controllers for receiving corresponding spread pilot signals, controlling the gains of the spread pilot signals under the gain control of the time controller, and applying the result to the adder.

15. The transmitting device of claim 14, further comprising a time controller for outputting a control signal to the gain controller, for control of the output of the second spreader.

16. A base station signal transmitting/receiving method comprising the steps of:

setting a first signal on a common channel and a pilot signal on a pilot channel to a predetermined power level and a second signal on a dedicated channel to a different level according to the number of subscribers in a base station;

increasing a ratio of the transmission power of the pilot signal to the overall transmission power of the base station for a predetermined time period in the base station; and

acquiring at a terminal at least one base station signal transmitted for the predetermined time period.

17. The method of claim 16, wherein the base station increases the ratio of the transmission power of the pilot signal to the overall transmission power by increasing the transmission power of the pilot signal.

18. The method of claim 16, wherein the base station increases the ratio of the transmission power of the pilot signal to the overall transmission power by increasing the transmission power of the pilot signal and decreasing the transmission power of the data channel signal.

19. The method of claim 16, wherein the ratio of the transmission power of the pilot signal to the overall transmission power satisfies the inequality

$$\frac{pilot\ Ec + \Delta P_1}{Ior + \Delta P_2} > \frac{\text{pilot Ec}}{\text{Ior}}$$

where Ior is the normal level of the overall transmission power density of the base station

pilot Ec: energy per chip of the pilot signal on the pilot channel

P1: power increment of the pilot signal on the pilot channel, and

P2: increment of the overall transmission power of the base station

20. The method of claim 16, wherein the base station increases the ratio of the transmission power of the pilot signal to the overall transmission power by decreasing the

transmission power of the data channel signal.

21. The method of claim 16, wherein the base station increases the ratio of the transmission power of the pilot signal to the overall transmission power by increasing the transmission power of the pilot signal and decreasing the transmission power of the other channel signals.

22. The method of claim 20, wherein the base station decreases the transmission power of the other channel signals to zero.

23. The method of claim 16, wherein the ratio of the transmission power of the pilot signal to the overall transmission power satisfies the inequality

$$\frac{pilot\ Ec + \Delta P_4}{Ior - \Delta P_3} > \frac{\text{pilot Ec}}{\text{Ior}}$$

where Ior is the normal level of the overall transmission power density of the base station

pilot Ec: energy per chip of the pilot signal on the pilot channel

P3: increment of the overall transmission power of the base station,

and

P4: power increment of the pilot signal on the pilot channel

24. The method of claim 16, wherein the predetermined time period is synchronized between at least two base stations.

25. The method of claim 24, wherein the predetermined time period is the same in the at least two base stations.

26. The method of claim 24, wherein the predetermined time period is different in the at least two base stations.

27. The method of claim 24, wherein the at least two base stations maintain the ratio of the transmission power of the pilot signal to the overall transmission power of the base station at the same value.

28. A mobile communication system comprising:

a base station transmitter for transmitting a pilot signal, a common channel signal, and a data channel signal, with a ratio of the transmission power of the pilot signal to the overall transmission power of a base station increased for a predetermined time period for signal transmission; and

a mobile station receiver for acquiring at least one base station signal transmitted from the predetermined time period.

29. The mobile communication system of claim 28, wherein the predetermined time period is located at the boundary of consecutive data frames of the second signal.

30. The mobile communication system of claim 28, wherein the ratio of the transmission power of the pilot signal to the overall transmission power satisfies the inequality

$$\frac{pilot\ Ec + \Delta P_1}{Ior + \Delta P_2} > \frac{\text{pilot Ec}}{\text{Ior}}$$

where Ior is the normal level of the overall transmission power density of the base station

pilot Ec: energy per chip of the pilot signal on the pilot channel

P1: power increment of the pilot signal on the pilot channel, and

P2: increment of the overall transmission power of the base station.

31. The mobile communication system of claim 28, wherein the ratio of the transmission power of the pilot signal to the overall transmission power satisfies the inequality

$$\frac{pilot\ Ec + \Delta P_4}{Ior - \Delta P_3} > \frac{\text{pilot Ec}}{\text{Ior}}$$

where Ior is the normal level of the overall transmission power density of the base station

pilot Ec: energy per chip of the pilot signal on the pilot channel

P3: increment of the overall transmission power of the base station, and

P4: power increment of the pilot signal on the pilot channel.

32. The mobile communication system of claim 28, wherein the pilot signal sent for the predetermined time period is spread by a first spreading code, and the pilot signal sent for the other time period is spread by a second spreading code.

33. The mobile communication system of claim 28, wherein the pilot signal is spread by one spreading code.

34. The mobile communication system of claim 32, wherein the mobile station receiver acquires the at least one base station signal received for the predetermined time period by calculating a correlation value between the first and second spreading codes.

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35. A receiving device in a mobile station, comprising:

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a searcher for receiving a base station signal which is sent with a changed ratio of the transmission power of a pilot signal to the overall transmission power of a base station for a predetermined time period, despreading the base station signal by a spreading code of the pilot signal, and detecting an energy from the despread signal thereby acquiring the base station signal.

36. The receiving device of claim 35, wherein the searcher comprises:

a spreading code generator for generating the first and second spreading codes;

a despreader for despreading the base station signal by the first and second spreading codes; and

an energy calculator for calculating an energy of the despread signal.

37. The receiving device of claim 36, wherein the despreader comprises:

a first multiplier for multiplying the received base station signal by a spread

spectrum spreading code;

a second multiplier for multiplying a signal received from the first multiplier by the first and second spreading codes; and

a plurality of accumulators for accumulating signals received from the second multiplier in predetermined units.

38. The receiving device of claim 37, wherein the first and second spreading codes are orthogonal codes.

39. The receiving device of claim 35, wherein the pilot signal is spread by one spreading code.

40. A searcher in a mobile station receiving device which acquires a base station signal, a ratio of the transmission power of a pilot signal to the overall transmission power of a base station being increased for a predetermined time period, the device comprising:

a PN despreader for multiplying the base station signal by a PN spreading code for despreading;

a plurality of orthogonal demodulators for multiplying the despread signal by at least two predetermined orthogonal codes and generating orthogonally demodulated signals;

a plurality of accumulators for accumulating signals received from the orthogonal demodulators in predetermined units and outputting despread signals;

a plurality of gain controllers for compensating for the gains of the

corresponding despread signals;

a combiner for combining the gain-compensated signals; and

an energy calculator for obtaining the energy of the combined despread signal.

41. The searcher of claim 40, further comprising a second gain controller connected to an output terminal of the energy calculator for normalizing the gain compensation.

42. The searcher of claim 40, wherein the gain controllers multiply the corresponding despread signals by G_N^* (a complex conjugate of each of the at least two predetermined orthogonal codes), for gain compensation.

43. The searcher of claim 40, wherein the gain controllers multiply the corresponding despread signals by $Gi^*/|Gi|$ where Gi is the sign of each of the at least two predetermined orthogonal codes; and

Gi* is a complex conjugate of Gi for gain compensation.

44. A searcher in a mobile station receiving device which acquires a base station signal, a ratio of the transmission power of a pilot signal to the overall transmission power of a base station being increased for a predetermined time period, the device comprising:

a PN despreader for multiplying the pilot signal received on the pilot channel by a PN spreading code, for despreading;

an orthogonal demodulator for multiplying the despread pilot signal by a predetermined orthogonal code and generating an orthogonally demodulated signal;

a controller for assigning a path according to the signs of the orthogonal codes of the received signal;

a plurality of accumulators equal to the number of assigned path for accumulating signals distributed to the paths;

a plurality of gain controllers for compensating for the phase gains of signals received from the accumulators;

a combiner for combining signals received from the gain controllers; and

an energy calculator for obtaining the energy of a signal received from the combiner.

45. The searcher of claim 44, wherein if the orthogonal codes have the same sign, the controller assigns the output signal of the orthogonal demodulator to a first path, otherwise if the orthogonal codes have different signs, the controller assigns the output signal of the orthogonal demodulator to a second path, and the controller compensates the gain of the output of the first path accumulator by (G0+G1)* (where G0 and G1 are complex gains of the orthogonal codes) and the controller compensates for the gain of the output of the second path accumulator with (G0-G1)*.

46. The searcher of claim 45, further comprising a second gain controller connected to an output terminal of the energy calculator for normalizing the gain compensation.

47. A signal transmitting/receiving method in a mobile communication system, comprising the steps of:

changing the ratio of the transmission power of a pilot signal to the overall transmission power of at least two base stations for a predetermined time period by the base stations; and

acquiring a base station signal for the predetermined time period by a terminal.

48. The method of claim 47, wherein a first base station changes the ratio of the transmission power of the pilot signal to the overall transmission power by decreasing the overall transmission power, and a second base station changes the ratio of the transmission power of the pilot signal to the overall transmission power by increasing the transmission power of the pilot signal.

49. A method of acquiring signals from a plurality of base stations in a CDMA communication system, comprising the steps of:

(i) grouping the plurality of base stations into one set,

(ii) dividing the set into M subsets where M is a positive integer,

(iii) sending signals from the base stations within one of the M subsets with an overall transmission power lower than a usual level for a predetermined Nth time period where N is a positive integer,

(iv) sending signals from the other base stations at usual overall transmission power levels; and

despreading a base station signal received for the time period, thereby acquiring

the base station signal by a terminal.

50. The method of claim 49, wherein there is no intersection between the subsets.

51. The method of claim 49, wherein there are intersections between the subsets.

52. A method of acquiring signals from a plurality of base stations in a CDMA communication system, comprising the steps of:

(i) grouping the plurality of base stations into one set,

(ii) dividing the set into M subsets where M is a positive integer,

(iii) sending signals from the base stations within one of the M subsets with pilot signal power higher than a usual level for a predetermined Nth time period where N is a positive integer,

(iv) sending signals from the other base stations at usual overall transmission power levels; and

despreading a base station signal received for the time period, thereby acquiring the base station signal by a terminal.

53. The method of claim 52, wherein there is no intersection between the subsets.

54. The method of claim 52, wherein there are intersections between the

subsets.

55. The method of claim 47, further comprising the steps of:

receiving first signals from among pilot signals transmitted from at least two base stations by a mobile station;

measuring propagation delays of the first signals between the base stations and the mobile station;

measuring the distances between the base stations and the mobile station based on the measured propagation delays and sending information about the distances to a base station in communication with the terminal; and

determining the location of the terminal from the base station in communication based on the information,

whereby the location of the terminal can be estimated.

56. The method of claim 47, further comprising the steps of:

receiving first signals among pilot signals transmitted from at least two base stations by a mobile station;

measuring propagation delays and signal levels of the first signals between the base stations and the mobile stations; and

performing a set management on adjacent base stations based on the measured propagation delays and signal levels,

whereby a set management is performed by the terminal.

57. A signal transmitting method in a base station, comprising the steps of:

sending a base station signal with a predetermined ratio of the transmission power of the pilot signal to the overall transmission power; and

sending the base station signal with an increased ratio of the transmission power of the pilot signal to the overall transmission power for a predetermined time period.

58. A signal transmitting method in a base station, comprising the steps of:

transmitting a pilot signal at a predetermined power level; and

transmitting a predetermined signal of a common channel signal where the ratio of the transmission power of the predetermined signal to an overall transmission power of the base station is increased for a predetermined time period.

59. The method of claim 58, wherein the predetermined signal of the common channel signal includes additional information for transmission.

60. The method of claim 58, wherein the predetermined time period is located at the boundary of consecutive data frames.

61. The method of claim 60, wherein the predetermined time period occupies one-half of said consecutive data frames.

62. The method of claim 58, wherein the predetermined time period is set in

consideration of propagation environment around the base station, arrangement of base stations, and a signal bandwidth.

63. The method of claim 61, wherein the predetermined time period represents a fraction of one data frame.

64. The method of claim 58, wherein the base station increases the ratio of the transmission power of the predetermined signal of the common channel signal to the overall transmission power by increasing the transmission power of the predetermined signal.

65. The method of claim 58, wherein the base station increases the ratio of the transmission power of the predetermined signal of the common channel signal to the overall transmission power by increasing the transmission power of the predetermined signal and the overall transmission power.

66. The method of claim 58, wherein the ratio of the transmission power of the predetermined signal to the overall transmission power satisfies the inequality

$$\frac{\text{predetermined signal Ec} + \Delta P_{11}}{\text{Ior} + \Delta P_{22}} > \frac{\text{predetermined signal Ec}}{\text{Ior}}$$

where Ior is the normal level of the overall transmission power density of the base station

predetermined signal Ec: energy per chip of the predetermined signal on a common channel

ΔP11: power increment of the predetermined signal on a common channel, and

ΔP22: increment of the overall transmission power of the base station

67. The method of claim 58, wherein the base station increases the ratio of the transmission power of the predetermined signal of the common channel signal to the overall transmission power by decreasing the overall transmission power of the base station.

68. The method of claim 58, wherein the base station increases the ratio of the transmission power of the predetermined signal of the common channel signal to the overall transmission power by increasing the transmission power of the predetermined signal of the common channel signal and decreasing the overall transmission power.

69. The method of claim 58, wherein the ratio of the transmission power of the predetermined signal of the common channel signal to the overall transmission power satisfies the inequality

$$\frac{\text{pre det er min ed signal Ec} + \Delta P_{44}}{\text{Ior} + \Delta P_{33}} > \frac{\text{predetermined signal Ec}}{\text{Ior}}$$

where

Ior: the normal level of the overall transmission power density of the base station

predetermined signal Ec: energy per chip of the predetermined signal on a common channel

ΔP33: increment of the overall transmission power of the base station, and

ΔP44: power increment of the predetermined signal on a common channel.

70. A signal transmitting method for transmitting common channel signals and data channel signals from a base station in a mobile communication system, comprising the steps of:

transmitting the data channel signals; and

changing the ratio of the transmission power of a predetermined common

channel signal to the overall transmission power of the base station for a predetermined time period.

71. The method of claim 70, wherein the predetermined common channel signal includes additional information for transmission.

72. The method of claim 70, wherein the ratio of the transmission power of the predetermined signal to the overall transmission power satisfies the inequality

$$\frac{\text{predetermined signal Ec} + \Delta P_{11}}{\text{Ior} + \Delta P_{22}} > \frac{\text{predetermined signal Ec}}{\text{Ior}}$$

where

Ior: the normal level of the overall transmission power density of the base station

predetermined signal Ec: energy per chip of the predetermined signal on a common channel

ΔP11: power increment of the predetermined signal on a common channel, and

ΔP22: increment of the overall transmission power of the base station

73. The method of claim 70, wherein the ratio of the transmission power of the predetermined signal of the common channel signal to the overall transmission

power satisfies the inequality

$$\frac{\text{predetermined signal Ec} + \Delta P_{44}}{\text{Ior} + \Delta P_{33}} > \frac{\text{predetermined signal Ec}}{\text{Ior}}$$

where Ior is the normal level of the overall transmission power density of the base station

predetermined signal Ec: energy per chip of the predetermined signal on a common channel

ΔP33: increment of the overall transmission power of the base station, and

ΔP44: power increment of the predetermined signal on a common channel.

74. A base station signal transmitting/receiving method comprising the steps of:

transmitting a base station signal with a changed ratio of the transmission power of a predetermined common channel signal to the overall transmission power of a base station for a predetermined time period; and

acquiring at a terminal at least one base station signal transmitted for the predetermined time period.

75. The method of claim 74, wherein the predetermined time period is

synchronized between at least two base stations when there are at least two base stations in the vicinity of the terminal.

76. The method of claim 75, wherein the predetermined time period is different in the at least two base stations.

77. The method of claim 75, wherein the predetermined time period is the same in the at least two base stations.

78. The method of claim 75, wherein the at least two base stations maintain the ratio of the transmission power of the predetermined signal of the common channel signal to the overall transmission power of the base station at the same value.

79. The method of claim 75, wherein the predetermined signal of the common channel signal includes additional information for transmission.

80. The method of claim 74, wherein the ratio of the transmission power of the predetermined signal to the overall transmission power satisfies the inequality

$$\frac{\text{predetermined signal Ec} + \Delta P_{11}}{\text{Ior} + \Delta P_{22}} > \frac{\text{predetermined signal Ec}}{\text{Ior}}$$

where

Ior: the normal level of the overall transmission power density of the base station

predetermined signal Ec: energy per chip of the predetermined signal on a common channel

$\Delta P11$: power increment of the predetermined signal on a common channel, and

$\Delta P22$: increment of the overall transmission power of the base station

81. The method of claim 74, wherein the ratio of the transmission power of the predetermined signal of the common channel signal to the overall transmission power satisfies the inequality

$$\frac{\text{predetermined signal Ec} + \Delta P_{44}}{\text{Ior} + \Delta P_{33}} > \frac{\text{predetermined signal Ec}}{\text{Ior}}$$

where

Ior: is the normal level of the overall transmission power density of the base station

predetermined signal Ec: energy per chip of the predetermined signal on a common channel

$\Delta P33$: increment of the overall transmission power of the base station, and

$\Delta P44$: power increment of the predetermined signal on a common

channel.

82. A base station signal transmitting/receiving device comprising:

a base station transmitter for transmitting a signal with a changed ratio of the transmission power of a predetermined common channel signal to the overall transmission power of a base station for a predetermined time period; and

a mobile station receiver for acquiring at least one base station signal transmitted for the predetermined time period.

83. A base station signal transmitting/receiving device comprising:

a base station transmitter for transmitting a signal, the ratio of the transmission power of a predetermined common channel signal to the overall transmission power of a base station being changed for a predetermined time period and a pilot signal being at a predetermined power level for a predetermined time period; and

a mobile station receiver for acquiring at least one base station signal transmitted for the predetermined time period.

84. A base station signal transmitting method in a mobile communication system having a pilot signal and at least one data channel, comprising the steps of:

transmitting the pilot signal at a predetermined power level; and

increasing the transmission power of the pilot signal for a predetermined time period.

85. The method of claim 84, wherein the predetermined time period is located at the boundary between consecutive frames of the data channel.

86. The method of claim 84, wherein the transmission power of the pilot signal is periodically increased for the predetermined time period.

87. The method of claim 84, further comprising the step of notifying a mobile station of the predetermined time period by a base station.

88. The method of claim 84, wherein the transmission power of at least one of the other channel signals is decreased for the predetermined time period when the transmission power of the pilot signal is increased.

89. The method of claim 84, wherein transmission of at least one of the other channel signals is stopped for the predetermined time period when the transmission power of the pilot signal is increased.

90. A base station signal transmitting method in a mobile communication system having at least one pilot signal and at least one data channel, comprising the steps of:

stopping transmission of the pilot signal for a first time period; and

transmitting the pilot signal for a second time period.

91. The method of claim 90, wherein the second time period is located at the

boundary between consecutive frames of the data channel.

92. The method of claim 90, wherein the transmission power of the pilot signal is periodically increased for the second time period.

93. The method of claim 90, further comprising the step of notifying a mobile station of the second time period by a base station.

94. The method of claim 90, wherein the transmission power of at least one of the other channel signals is decreased for the second time period when the transmission power of the pilot signal is increased.

95. The method of claim 90, wherein transmission of at least one of the other channel signals is stopped for the second time period when the transmission power of the pilot signal is increased.

96. The method of claim 1, wherein the transmission power of one of the common channel signal and the data channel signal is decreased for the predetermined time period.

97. The transmitting device of claim 11, wherein the transmission power of one of the common channel signal and the data channel signal is decreased for the time period when the second pilot signal is transmitted.

98. The transmitting device of claim 97, wherein the time period is located over a beginning portion of a first frame and a latter portion of a following frame.

99. The method of claim 24, wherein while one of the at least two base stations increases the transmission power of the pilot signal, the other base station decreases the overall transmission power.

100. The method of claim 47, wherein the ratio of the transmission power of a next pilot signal to be transmitted to the overall transmission power is changed by decreasing the overall transmission power in a third base station wherein said third base station is other than said first or second base station, and increasing the overall transmission power in these base stations other than said third base station.

101. The method of claim 58, wherein the predetermined common channel signal is transmitted only for a predetermined time period.

102. The method of claim 70, wherein the predetermined common channel signal is transmitted only for the predetermined time period.

103. The method of claim 74, wherein the predetermined signal is transmitted only for the predetermined time period.